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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/764,244 | 01/23/2004 | Ken Gary Pomaranski | 200312921-1 | 8052 |

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| EXAMINER |
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IQBAL, NADEEM

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| ART UNIT | PAPER NUMBER |
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2114

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/764,244 | Applicant(s) POMARANSKI ET AL. | |
| | Examiner Nadeem Iqbal | Art Unit 2114 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-15 and 17-20 is/are rejected.
7) ☐ Claim(s) 16 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/23/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 14 & 15 recite the limitation "the two status inputs" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan et al., (U.S. Patent number 6304546) in view of Lindhorst-Ko (U.S. Patent number 6725401).

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4. As per claim 1, Natarajan et al., (Natarajan) teaches (col. 2, lines 1-4) a method and system for sending and receiving end-to-end bi-directional keep-alive messages using virtual circuits. He also teaches that nodes coupled to a network periodically exchange keep-alive messages which indicate information regarding configuration and status of the circuits. He thus teaches limitations pertain to a method of status generation for a node, sending a heartbeat signal from the node through a network to the cluster, determining a current status of the node. He does not explicitly disclose to send the current status out through a specialized interface to a next node. Lindhorst-Ko teaches (col. 3, lines 12-14) a set of at least two communications paths are established across the network between a source node and a destination node. The source node also monitors a status of each of the set of communications paths. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include into the invention of Natarajan to include the set of two communication paths between the source node and a destination node thus providing a specialized interface to the invention of Natarajan. This is because Natarajan already teaches a local management interface between the first node and the first local router and a second local communication link, while Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus providing motivation for the stated inclusion.

5. As per claim 2, Lindhorst-Ko teaches (col. 3, lines 12-14) a set of at least two communications paths are established across the network between a source node and a destination node. The source node also monitors a status of each of the set of communications paths. He thus provides for inter-node status communication.

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6. As per claim 3, Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus provides for sending the degraded level out.

7. As per claim 4, Lindhorst-Ko teaches (col. 3, lines 12-14) a set of at least two communications paths are established across the network between a source node and a destination node. The source node also monitors a status of each of the set of communications paths. He thus provides the for inter-node status communication.

8. As per claim 5, Lindhorst-Ko teaches (col. 5 lines 38-40) a network comprising a plurality of nodes 4 interconnected by physical links to form four adjoining rings R1-R4 which may be bi-directional line switching Rings. He thus teaches coupling nodes of the cluster in a ring topology.

9. As per claims 6 & 13, Natarajan substantially teaches the claimed invention as disclosed above related to claim 1. He also teaches (col. 2, lines 1-4) that nodes coupled to a network periodically exchange keep-alive messages which indicate information regarding configuration and status of the circuits. He thus teaches limitations pertain checking status received from the previous node, checking a heartbeat input received from the previous node. He does not explicitly disclose checking a degraded status input received from the previous node. Lindhorst-Ko teaches (col. 3, lines 12-14) that the source node also monitors a status of each of the set of communications paths, and also teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus provides for sending the degraded level out. It would have been obvious to a person of ordinary skill in the art to include into the invention of Natarajan to include for compensating for network resource failure and provides for

a graceful degradation of service as taught by Lindhorst-Ko. This is because Natarajan already teaches a local management interface between the first node and the first local router and a second local communication link, while Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus providing motivation for the stated inclusion.

10. As per claim 7, Lindhorst-Ko teaches (col. 6, lines 39-43) a resource data base that provides information concerning an operational status of each path within the path array. This status information may be provided as a status field within the path array as show in fig. 1, or may be provided as a separate table. He thus teaches the degraded status input comprising multiple degradation levels.

11. As per claim 8, Natarajan teaches (col. 2, lines 47-49) that communication between the first node and the second node is conducted using a virtual circuit, including the first local communication link, the second local communication link. He thus provides for determination. He also teaches (col. 2, lines 3-5) to periodically exchanging data link messages which indicate information regarding configuration and status. He thus teaches capability to determine if a configuration file is changed and retrieve configuration file from a previous node.

12. As per claims 9 & 10, Lindhorst-Ko teaches (col. 4, lines 47-49) that the search of a path array may be accomplished by means of conventional searching algorithms using a resource identifier of the failed resource as an array index. He thus performs logical analysis to differentiate failure of nodes.

13. As per claims 11 & 12, Lindhorst-Ko teaches (col. 4, lines 50-53) to used the identifier of the failed resource to identify a resource field corresponding to the failed resource, and then the

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path array searched to identify path records having resource indicator in the identified resource field. He thus teaches a logical analysis to differentiate between the failures of a previous node.

14. As per claims 14 & 15, Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, He thus provides for reporting that a network carrying the heartbeat is down.

15. As per claim 17, Natarajan substantially teaches the claimed invention as disclosed related to claim 1 above He also teaches (col. 2, lines 1-4) that nodes coupled to a network periodically exchange keep-alive messages which indicate information regarding configuration and status of the circuits. He thus teaches limitations pertain to a general inter-node communication network, configured to carry signals including heartbeat signals from the nodes. He does not explicitly disclose a separate inter-node communication channel for communicating node status signals. Lindhorst-Ko teaches (col. 3, lines 12-14) a set of at least two communications paths are established across the network between a source node and a destination node. The source node also monitors a status of each of the set of communications paths. It would have been obvious to a person of ordinary skill in the art to include into the invention of Natarajan to include the set of two communication paths between the source node and a destination node thus providing a separate inter-node communication channel to the invention of Natarajan. This is because Natarajan already teaches a local management interface between the first node and the first local router and a second local communication link, while Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus providing motivation for the stated inclusion.

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16. As per claim 18, Lindhorst-Ko teaches (col. 3, lines 11-12) compensating for network resource failure and provides for a graceful degradation of service, thus provides for sending the degraded level out.

17. As per claim 19, Lindhorst-Ko teaches (col. 4, lines 50-53) to used the identifier of the failed resource to identify a resource field corresponding to the failed resource, and then the path array searched to identify path records having resource indicator in the identified resource field. He thus teaches a logical analysis to differentiate between the failures of a previous node.

18. As per claim 20, Lindhorst-Ko teaches (col. 6, lines 39-43) a resource data base that provides information concerning an operational status of each path within the path array. This status information may be provided as a status field within the path array as show in fig. 1, or may be provided as a separate table. He thus teaches the degraded status input comprising multiple degradation levels.

Allowable Subject Matter

19. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

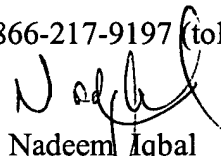
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadeem Iqbal whose telephone number is (571)-272-3659. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (571)-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Nadeem Iqbal
Primary Examiner
Art Unit 2114

NI